70

SEQUENCE LISTING

<110> Garnaat, Carl W. Lowe, Keith S. Roth, Bradley A.

<120> ZmAxig1 Polynucleotides and Methods of Use										
<130> 1016										
<150> US 60/217,942 <151> 2000-07-13										
<160> 21										
<170> FastSEQ for Windows Version 3.0										
<210> 1 <211> 1271 <212> DNA <213> Zea mays										
<220> <221> CDS <222> (170)(763)										
<pre><400> 1 gcaggaactt atttgccgtg cgctcccagg tctccgctcg cgtgccttcc agtctgtctc acactagctg ctgtgggacg atcgaagtgg gtgtgtcagc tagctagctg cgccgtgacc acgcacatga ccgcagtgcg cgcggggctg atcaagggaa agtgatcgg atg gag ctg</pre>										
gag ctc ggg ctc gcg ccg ccg aac ccg cat cag ccg ctg gct gcc gcc Glu Leu Gly Leu Ala Pro Pro Asn Pro His Gln Pro Leu Ala Ala Ala 5										
gcc gag ttc gtc ggt ctc ctc agc agc tcg gct ggc tcg tgc ggg aac Ala Glu Phe Val Gly Leu Leu Ser Ser Ser Ala Gly Ser Cys Gly Asn 20 25 30 35										
aag agg gtt ctc ggc gac gcg ttc ggg gcc gcc aag gcg gcc acg ctt Lys Arg Val Leu Gly Asp Ala Phe Gly Ala Ala Lys Ala Ala Thr Leu 40 45 50										

60

120

178

226

274

322

370

418

80

ccg ctc ttc gtc tgc gag gat ggc gac ggc ggc ggc ggc gac cgc gac

Pro Leu Phe Val Cys Glu Asp Gly Asp Gly Gly Gly Asp Arg Asp

cgc gac ggc gtc gtc gac cat gaa cag caa agc aac aat gta ccc agg

Arg Asp Gly Val Val Asp His Glu Gln Gln Ser Asn Asn Val Pro Arg

75

															agg Arg		466
															ccc Pro		514
					_						_		_		ctg Leu 130		562
															cat His		610
															cct Pro		658
															gga Gly		706
															aag Lys		754
	ctt Leu		tag *	ccga	acggt	cg g	geged	ctcaç	ga ga	acgto	egtgt	z ggt	ccgt	ctc			803
	acca	aggat	cg q	gagca	agtgt	a gt	acto	cctg	g gcg	gtcat	ctg	cgta	aataa	acgi	tgtt	tctgt	863
E RI										_	_	_		_		gcttca	923
H																ctttg	983
																acttac	1043
už.																acgtgt	1103
																ttatc aaaaa	1163 1223
			_					_			aaaa		_		Jaaco	uaaaa	1271

<210> 2

<211> 197

<212> PRT

<213> Zea mays

<400> 2

 Met
 Glu
 Leu
 Gly
 Leu
 Ala
 Pro
 Pro
 Asn
 Pro
 His
 Gln
 Pro
 Leu

 1
 5
 10
 10
 15
 15

 Ala
 Ala
 Ala
 Glu
 Phe
 Val
 Gly
 Leu
 Leu
 Ser
 Ser
 Ser
 Ala
 Gly
 Ser

 Cys
 Gly
 Asn
 Lys
 Arg
 Val
 Leu
 Gly
 Asp
 Ala
 Phe
 Gly
 Ala
 Ala
 Ala
 Lys
 Ala

 Ala
 Thr
 Leu
 Pro
 Leu
 Phe
 Val
 Cys
 Glu
 Asp
 Gly
 Asp
 Gly
 Gly

```
80
65
                    70
                                        75
Val Pro Arg Lys Lys Arg Leu Val Gly Trp Pro Pro Val Lys Cys Ala
                                    90
                85
Arg Arg Ser Cys Gly Gly Tyr Val Lys Val Lys Leu Glu Gly
                                105
Val Pro Ile Gly Arg Lys Val Asp Val Ser Ile His Gly Ser Tyr Gln
                            120
                                                125
Glu Leu Leu Arg Thr Leu Glu Ser Met Phe Pro Ser Gly Asn Gln Gln
                        135
                                            140
Asp His Ala Glu Asp Glu Val Val Ser His Glu Arg Arg Arg
                    150
                                        155
His Pro Tyr Val Val Thr Tyr Glu Asp Gly Glu Gly Asp Trp Leu Leu
                165
                                    170
Val Gly Asp Asp Val Pro Trp Glu Val Phe Val Lys Ser Val Lys Arq
                                185
Leu Lys Ile Leu Ala
        195
      <210> 3
      <211> 1310
      <212> DNA
      <213> Zea mays
      <400> 3
cccatcgctq ctttqtctac atcatqttct tcatcatcct ccccaqqcqa cqcqtqctqc
                                                                        60
tgttcttatt cagactaccg ttcgagtgac tgcatggcgt acatctttct gcatcgactt
                                                                       120
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct
                                                                       180
taagcatcgg ttactccgta gggtacattc tgttcttctt atttgtgcat atttttattg
                                                                       240
ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc
                                                                       300
acaatatttt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca
                                                                       360
ttgtaatgtt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc
                                                                       420
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt
                                                                       480
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacggttaa
                                                                       540
tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat
                                                                       600
cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga
                                                                       660-
accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc
                                                                       720
gctggcccca cgggcgtgct gcgtgcacqa agggcactac cccaacctct caccqaaaaa
                                                                       780
ccgcgctgga tcggcaaatc aaacgaqqtg qtqccccqtq cccactctcc acqtccacqq
                                                                       840
caccatccct ctgcagccgc tcaccagcca tgccgtgtcg cggaacggca caaccacccc
                                                                       900
caacccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag
                                                                       960
geggeeegeg etgetgagte ceetggacae ecqaeaceet gteggeeett tqtttattea
                                                                      1020
tcccgaaatc tcatctgccc ccacqqccqa ctqcqctqcq ccqcccqqat atatataccc
                                                                      1080
atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc
                                                                      1140
aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccttccag tctgtctcac
                                                                      1200
actagetget gtgggaegat egaagtgggt gtgteageta getagetgeg eegtgaeeae
                                                                      1260
gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcggatg
                                                                      1310
      <210> 4
      <211> 1310
      <212> DNA
      <213> Zea mays
      <400> 4
cccatcgctg ctttgtctac atcatgttct tcatcatcct ccccaggcga cgcqtqctqc
                                                                        60
tgttcttatt cagactaccq ttcgaqtqac tqcatqqcqt acatctttct qcatcqactt
                                                                       120
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct
                                                                       180
taagcatcgg ttactccgta gggtacattc tgttcttctt atttgtgcat atttttattg
                                                                       240
```

```
ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc
                                                                      300
acaatatttt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca
                                                                      360
ttgtaatgtt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc
                                                                      420
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt
                                                                      480
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacggttaa
                                                                      540
                                                                      600
tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat
                                                                      660
cataaatcca aagtaggagc ggtgcatqat qaqaatcqct ctcaqtactc qacataatqa
accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaggctc
                                                                      720
gctggcccca cgggcgtgct gcgtgcacga agggcactac cccaacctct caccgaaaaa
                                                                      780
ccgcgctgga tcggcaaatc aaacgaggtg gtgccccgtg cccactctcc acqtccacqq
                                                                      840
caccatecet etgeageege teaceageea tgeegtgteg eggaaeggea caaceaeeee
                                                                      900
caacccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag
                                                                     960
gcggcccgcg ctgctgagtc ccctggacac ccgacaccct gtcggccctt tgtttattca
                                                                     1020
1080
atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc
                                                                     1140
aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccttccag tctgtctcac
                                                                     1200
actagetget gtgggaegat egaagtgggt gtgteageta getagetgeg eegtgaeeae
                                                                     1260
gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcccatg
                                                                     1310
      <210> 5
      <211> 3123
      <212> DNA
      <213> Zea mays
      <400> 5
cccatcgctg ctttgtctac atcatgttct tcatcatcct ccccaggcga cgcgtgctgc
                                                                      60
tgttcttatt cagactaccg ttcgagtgac tgcatggcgt acatctttct gcatcgactt
                                                                      120
tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct
                                                                      180
taagcatcgg ttactccgta gggtacattc tgttcttctt atttgtgcat atttttattg
                                                                      240
ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc
                                                                      300
acaatatttt totaaattaa attaaaacta aaaatgacta aatttotaac accaacgaca
                                                                      360
ttgtaatgtt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc
                                                                     420
tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt
                                                                     480
ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcq qtacqqttaa
                                                                      540
teegtetatg taegtgggea tgaegaacae eegtgataae gaaggattaa egtgeacaat
                                                                     600
cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga
                                                                     660
accttacgag gtacaacagg caggcaggca gggaccaggg gccqccttta tttcaqqctc
                                                                     720
gctggcccca cgggcgtgct gcgtgcacga agggcactac cccaacctct caccgaaaaa
                                                                     780
cegegetgga teggeaaate aaacgaggtg gtgeecegtg cecaetetee aegteeaegg
                                                                     840
caccatecet etgeageege teaceageea tgeegtgteg eggaaeggea caaccaecee
                                                                     900
caacccactc acgaaacccc gtcccggccg tgcccgtgtc ggtccgcgct cggcaacgag
                                                                     960
gcggcccgcg ctgctgagtc ccctggacac ccgacaccct gtcggccctt tgtttattca
                                                                    1020
tecegaaate teatetgeee eeacggeega etgegetgeg eegeeeggat atatataeee
                                                                    1080
atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc
                                                                    1140
aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccttccag tctgtctcac
                                                                    1200
actagetget gtgggaegat egaagtgggt gtgteageta getagetgeg eegtgaeeae
                                                                    1260
gcacatgacc gcagtgcgcg cggggctgat caagggaaag tgatcggatg gagctggagc
                                                                    1320
tegggetege geegeegaac eegeateage egetggetge egeegeegag ttegteggte
                                                                    1380
tecteageag eteggetgge tegtgeggga acaagagggt teteggegae gegttegggg
                                                                    1440
ccgccaaggc ggccacgctt ccgctcttcg tctgcgagga tggcgacgga ggcggcggcg
                                                                    1500
accgcgaccg cgacggcgtc gtcgaccatg aacagcaaag caacaagtga gttgtggtta
                                                                    1560
aaaataccga ccacgtgcgt acagggaggg tcttattata cccaaatccg atccgtggtg
                                                                    1620
tgtgtagtgt acccaggaag aagaggctgg tggggtggcc gccggtgaag tgcgcgcgta
                                                                    1680
ggcgtagctg cggcggcggg tacgtgaagg tgaagctgga aggggtgccc atcqqqcqqa
                                                                    1740
aggtggacgt gtccatccac ggctcgtacc aggagctgct ccgcacgctc gagagcatgt
                                                                    1800
teeetteggg taaccaacaa ggtgegtaeg tteeegggee geggegagee ggeeggegae
                                                                    1860
eggeggtget geggaegatg cetttettte actgataate atetgeegee ategttetgg
                                                                    1920
```

```
tecegacaeg tgeeettget tecegttetg etceeggeae ttaacttggt egeatataet
                                                                      1980
attcctgtaa cctctggcag atcatgcaga agacgaggtg gtggtctcgc acgagcgccg
                                                                      2040
ccgtcgccat ccttatgtag tcacctacga ggacggcgaa ggggactggt tgctcgtcgg
                                                                      2100
agatgatgtg ccgtgggagt acgtatcagt cactactact gtcgtctgta tgactgtatc
                                                                      2160
gatggtgacg gcaacaatat aatccaatta attattcagc qaacttaaaa acqacqttqa
                                                                      2220
tttccttgca gggtctttgt caagtcagtg aagcggctca agatacttqc gtagccgacg
                                                                      2280
gtcggcgcct cagagacgtc gtgtggtccg tctcaccagg atcggagcag tgtagtactc
                                                                      2340
ctgggcgtca tctgcgtaat aacgttgttt ctgtcctgtg tgcccgtagc agtacgtact
                                                                      2400
gtcctatagt aagctagctt tatggggtgc ttcaqctttc aqaqcatqac qaaaqcactq
                                                                      2460
attagctgct gtcatcacat ttggttcgtc tttgtgtcgt acqqtatcqc tgqcqtcaqt
                                                                      2520
gtcgcggcag cctaggtgat ctaagcatac ttactatctc aagttacttt tggtttcctg
                                                                      2580
agcttgcatg gtaattcata taccgtatac gtgtgtgact caggggcqaa qctqccttaa
                                                                      2640
ggcacagggg tcaccggacc cgatggaatt tatcaaatcc agtgtaaaat actatttaac
                                                                      2700
actgttcatc aatatatttg atttcaataa ttcatggagc tgaccttgtg gatccatttt
                                                                      2760
ctgtcttcgc ctctggtgtg actagtattt tggtttgact tttcactctg tataagatat
                                                                      2820
atattatacc agcgagttta tcgactgcta gttttacaaq aggcttaact ctttcaattq
                                                                      2880
cttattttta ttgcaacaac acactcctcc gttgttgtgg tattagatgt ggttctgaat
                                                                      2940
gtaaatgtca ttataggata taaatgtagt gtttcctagt tttaccctag ctttcgcatg
                                                                      3000
catagtggga aagtgtacta actctcctca tgcagaaaga ggtgtggtat acctaacaaa
                                                                      3060
atcatacatc actactaatc tacggataat atatataaac cgtagcgaca cacgagtgct
                                                                      3120
tag
                                                                      3123
      <210> 6
      <211> 28
      <212> DNA
      <213> Zea mays
      <400> 6
agcagctagt gtgagacaga ctggaagg
                                                                        28
      <210> 7
      <211> 28
      <212> DNA
      <213> Artificial Sequence
      <220>
      <223> Zea mays
      <400> 7
gtacattgtt gctttgctgt tcatggtc
                                                                        28
      <210> 8
      <211> 29
      <212> DNA
      <213> Zea mays
      <400> 8
ctccagctcc atccgatcac tttcccttg
                                                                        29
      <210> 9
      <211> 29
      <212> DNA
      <213> Zea mays
      <400> 9
ctccagctcc atgggatcac tttcccttq
                                                                        29
```

	<210> 10	
	<211> 23	
	<212> DNA	
	<213> Zea mays	
	<400> 10	
	cgacccatcg ctgctttgtc tac	23
	<210> 11	
	<211> 36	
	<212> DNA	
	<213> Zea mays	
	<220>	
	<223> Designed oligonucleotide based upon the adapter	
	sequence and poly T to remove clones which have a	
	poly A tail but no cDNA.	
	<400> 11	
		2.0
	tcgacccacg cgtccgaaaa aaaaaaaaa aaaaaa	36
	<210> 12	
3	<211> 100	
Ö	<212> DNA	
	<213> Zea mays	
≈	12137 Dea mays	
¥ Fi	<400> 12	
: E F3	cgatcgaagt gggtgtgtca gctagctagc tgcgccgtga ccacgcacat gaccgcagtg	60
₩	cgcgcggggc tgatcaaggg aaagtgatcg gatggagctg	60 100
The section of the test that the	opopoggge tgaccaaggg aaagtgaccg gacggagctg	100
ļ.	<210> 13	
	<211> 52	
]	<212> DNA	
j	<213> Zea mays	
Anti Ima Ili dina Kadi		
į.	<400> 13	
1	gctagctgcg ccgtgaccac gcacatgacc gcagtgcgcg cggggctgat ca	52
- L		
	<210> 14	
	<211> 22	
	<212> DNA	
	<213> Zea mays	
	<400> 14	
	acaaccacc ccaacccact ca	22
	<210> 15	
	<211> 22	
	<212> DNA	
	<213> Zea mays	
	<400> 15	
	ctaagcactc gtgtgtcgct ac	22
	<210> 16	
	<211> 1309	
	<212> DNA	

<213> Zea mays

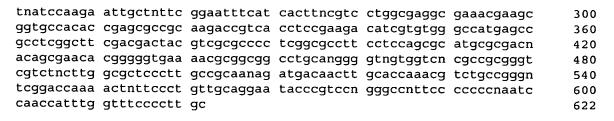
<400> 16

cccatcgctg ctttgtctac atcatgttct tcatcatcct ccccaggcga cgcgtgctgc 60 tgttcttatt cagactaccg ttcgagtgac tgcatggcgt acatctttct gcatcgactt 120 tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct 180 taagcatcgg ttactccgta gggtacattc tgttcttctt atttgtgcat atttttattg 240 ttgtttactg attatacqaq taqttataca tacatqcaca tacatatcat cacatatatc 300 acaatatttt tctaaattaa attaaaacta aaaatqacta aatttctaac accaacqaca 360 ttgtaatgtt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc 420 tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcqatgtgt 480 ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacggttaa 540 tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat 600 cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga 660 accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta tttcaqgctc 720 gctggcccca cgggcgtgct gcgtgcacga agggcactac cccaacctct caccgaaaac 780 cgcgctggat cggcaaatca aacgaggtgg tgccccgtgc ccactctcca cgtccacggc 840 accatecete tgeageeget caccageeat geegtgtege ggaaeggeae aaccaeeeee 900 aacccactca cgaaaccccg tcccggccgt gcccgtgtcg gtccgcgctc ggcaacgagg 960 eggecegege tgetgagtee cetggacace egacaceetg teggecettt gtttatteat 1020 1080 tegttatega tegategate gegteactea egggtagete atggtegage gtageatgea 1140 ggaacttatt tgccgtgcgc tcccaggtct ccgctcgcgt gccttccagt ctgtctcaca 1200 ctagctgctg tgggacgatc gaagtgggtg tgtcagctag ctagctgcgc cgtgaccacq 1260 cacatgaccg cagtgcgcgc ggggctgatc aagggaaagt gatcccatg 1309

<210> 17 <211> 1433 <212> DNA <213> Zea mays

<400> 17 agctagagta gtagcctgtg cttgctaccc ctggtcaaca catcgtagcc tcctatattt 60 tcctaatctt caaataacca tctcaaaagt tttttaaaaac atcttttgag gatatgtatc 120 ccatagccct agagcgctaa attgactact tttaqtcqat taaaaqqtat taqacatcct 180 tacaagtcct aagtatcaaa tcaccttcta tcggctatac acaactaacg gaagttatct 240 ctagtcacac taacttatgt cggtttccgc atggcagatc aaaattagct aacttttgtt 300 ggctaataag agcaattcca aaagaacgtg taaactaatc tcaaaacaga tattagttaa 360 gaatagtaat ttttcttact ccaacagttc cctcagtctt ccccaaaaaa ttaagcgttc 420 cgcatccaca gcctcctctc ggtcgtattt tggtgtgttt catccctccc caatccattt 480 ctcaacgtat cagatcatcc accgcctacg acgactgtac agtttgcgtc acatatcaca 540 tttaaaggaa ctgttggagt acccatcata attcactctt aaaaaatttt agcctgctct 600 caataatcaa ttggggggt aaaattttta acatcctttc ggatctaatc caacttatgg 660 aagttagcta gctctggtcg cgctaacttc tgtcgatcgc ctattagcta atactccatc 720 tgtcccatta tataaggtat aaccaactct gattcaaaga ccaaaaatat acttaattqt 780 gtctatacca cttcatcgat gtacgtatgc atagaaagag cacatcttat attgtggaac 840 aagaacaaaa atatggttac gccttatatt ataagacgta gaaatcaatg gtttacaata 900 gccaagaata gatgttttta tttatttcct atatagatgt ttttatttat ttcctatatg 960 tttcacaata gccttatatt gtgccgaaaa tttaggcaca cqtgccacqa acgtctgaaa 1020 tgtactccgc gcgtattacc atgcactacg acgtacgtag gagtatgtac gttgaaccaa 1080 gcacacatat atctctgaca cagtacaatg atatactaca acaacaacag tactgcccaa 1140 ttcatccatt ttcacgttcc atcttccgcg tgtgacaact cgatcggcca cgcacgcaga 1200 cgacgacgga gcagtacttc acagaatcct ccgccactcg tcacaccaac aggcgcgcgc 1260 tggtgcgcat gcatcatgtg catgccatcg tccgtccctt ggcgtgcctc ggtagacggt 1320 aacgtatcct cacacatcac aagaacgaca cacagaaacc agtagccact actccatcca 1380 ccacgagcga gcgagcgata accctagcta gcttcaggat ccagcgagag ccc 1433 <210> 18 <211> 1173

```
<212> DNA
      <213> Zea mays
      <400> 18
ccacgcgtcc gccaccacac cacgagcgcg cgataaccct agctagcttc aggtagtagc
                                                                     60
gagagccaat ggactccagc agcttcctcc ctgccgccgg cgcggagaat ggctcggcgg
                                                                    120
cgggcggcgc caacaatggc ggcgctgctc agcagcatgc ggcgccggcg atccgcgagc
                                                                    180
aggaccggct gatgccgatc gcgaacgtga tccgcatcat gcggcgcgtg ctgccggcgc
                                                                    240
acgccaagat ctcggacgac gccaaggaga cgatccagga gtgcgtgtcg gagtacatca
                                                                    300
gcttcatcac gggggaggcc aacgagcggt gccagcggga gcagcgcaag accatcaccg
                                                                    360
ccgaggacgt gctgtgggcc atgagccgcc tcggcttcga cgactacgtc gagccgctcg
                                                                    420
gcgcctacct ccaccgctac cgcgagttcg agggcgacgc gcgcggcgtc gggctcgtcc
                                                                    480
cgggggccgc cccatcgcgc ggcggcgacc accacccgca ctccatgtcg ccagcggcga
                                                                    540
tgctcaagtc ccgcgggcca gtctccggag ccgccatgct accgcaccac caccaccac
                                                                    600
acgacatgca gatgcacgcc gccatgtacg ggggaacggc cgtgcccccg ccggccgggc
                                                                    660
ctcctcacca cggcgggttc ctcatgccac acccacaggg tagtagccac tacctgcctt
                                                                    720
acgcgtacga gcccacgtac ggcggtgagc acgccatggc tgcatactat ggaggcgccg
                                                                    780
cgtacgcgcc cggcaacggc gggagcggcg acggcagtgg cagtggcggc ggtggcggga
                                                                    840
gcgcgtcgca cacaccgcag ggcagcggcg gcttggagca cccgcacccg ttcgcgtaca
                                                                    900
agtagctagt tcgtacgtcg ttcgacttga gcaagccatc gatctgctga tctgaacgta
                                                                    960
cgctgtattg tacacgcatg cacgtacgta tcggcggcta gctctcctgt ttaagttgta
                                                                   1020
ctgtgattct gtcccggccg gctagcaact tagtatcttc cttcagtctc tagtttctta
                                                                   1080
gcagtcgtag aagtgttcaa tgcttgccag tgtgttgttt tagggccggg gtaaaccatc
                                                                   1140
cgatgagatt atttcaaaaa aaaaaaaaa aaa
                                                                   1173
      <210> 19
      <211> 763
      <212> DNA
      <213> Zea mays
      <400> 19
gcacgaggca agaccgtcac ctccgaggac atcgtgtggg ccatgagccg cctcggcttc
                                                                     60
gacgactacg tegegeeett eggegeette etceagegea tgegegaega eagegaecae
                                                                    120
ggcggtgaag agcgcggcgg ccctgcaggg cgtggtggct cgcgccgcgg ctcgtcgtcc
                                                                    180
ttgccgctcc actgcccgca gcagatgcac cacctgcacc cagccgtctg ccggcgtccg
                                                                    240
caccagageg tgtegeetge tgeaggatae geegteegge eegtteeeg eeegatgeea
                                                                    300
gcccgtgggt accgcatgca gggcggagac caccgcagcg tgggcggcgt ggctccctgc
                                                                    360
agctacggag gggcgctcgt ccaggccggt ggaacccaac acgttgttgg attccacgac
                                                                    420
gacgaggcaa gctcttcgag tgaaaatccg ccgccggagg ggcgtgccgc tggctcgaac
                                                                    480
tagcctagct tctcagttcc ccgtgtacaa taagaggggc ggtcgcggcg ccgcgcgcg
                                                                    540
600
agetggtgca egegegeeac etegeeggae gtegeegteg tegteggeat ggaettaace
                                                                    660
ggcgggccct gttgttattt ctcaagtttg tagccaacgc actgttcggt gcgttccata
                                                                    720
763
      <210> 20
      <211> 622
     <212> DNA
     <213> Zea mays
     <400> 20
gcatgaataa tccccaaaac cctaaagcca gtgctccttg caccttgcca ccggagcttc
                                                                     60
ccaaagaagc agtggcgacc gacgaagcac cgccgccaat gggcaacaac aacaacacgg
                                                                    120
aatcggcgac ggcgacgatg gtccgggagc aggaccggct gatgcccgtg gccaacgtgt
                                                                    180
ecegeateat gegeeaagtg etgeeteegt aegeeaagat eteegaegae geeeangaag
                                                                    240
```



<210> 21 <211> 65 <212> PRT <213> Zea mays

<400> 21

 Arg
 Glu
 Gln
 Asp
 Xaa
 Xaa
 Met
 Pro
 Ile
 Ala
 Asn
 Val
 Ile
 Arg
 Ile
 Met

 1
 5
 5
 1
 Ile
 Ile
 Ser
 Asp
 Ala
 Lys
 Glu

 Arg
 Xaa
 Leu
 Pro
 Xaa
 His
 Ala
 Lys
 Ile
 Ser
 Asp
 Ala
 Lys
 Glu

 Xaa
 Ile
 Glu
 Cys
 Xaa
 Xaa
 Xaa
 Xaa
 Arg
 Lys
 Thr
 Xaa
 Xaa
 Glu

 Xaa
 For
 For

Xaa 65